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WHAT DOES THE TOURISM DEMAND SURVEY TELL ABOUT LONG DISTANCE TRAVEL?

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1. INTRODUCTION

Long distance travel is one of the fastest increasing travel activities with a very high impact on the climate. Nevertheless the demand is scarcely documented from a transport perspective, nationally as well as internationally and policies to reduce the increase in demand are seldom addressed. This is in sharp contrast to the substantial public and private investments in infrastructure and transport modes for long distance travel by air as well as rail. Furthermore, it is a problem related to the serious environmental impact from air travel (Alonso et al., 2014; Christensen, 2016; Aamaas et al., 2013) The need for more research is therefore obvious.

The aim of our paper is to get more knowledge of the development in European travel activity to better understand if there are any possible limits to the increase in long distance travel.

State of research

Two European wide research projects are carried out, MEST (Methods for European Surveys and Travel Behaviour) from 1996-99 (Axhausen et al., 2003) and Kite from 2007-09 ("Kite - A Knowledge Base for Intermodal Passenger Travel in Europe," 2009). The main concern of both have been to develop data collection methodology and to assess collected data, e.g. the Dateline dataset. Analyses of the travel behaviour activity as such in Europe were not in focus.

At the national level Norway, Sweden, Finland, Great Britain, Switzerland, France and partly Germany are collecting long distance travel survey data as part of the NTS. The British long distance travel survey is comprehensively analysed and well documented in journals (Dargay & Clark, 2012). However, it only covers domestic long distance travel. (Frändberg & Vilhelmson, 2011) has for Sweden analysed the development in long distance travel from 1995 to 2006 and discussed this in relation to the development in daily travel. Most of the rest are typically only documented in national reports, see e.g. for Norway (Vågane, Brechan, & Hjorthol, 2011).

For the German NTSs information about long distance is inconsistent from survey to survey. (Frick and Grimm, 2014) have instead tried to collect other kind of smaller

German data sources to give an outline of the development in German medium and long distance travel.

For Denmark the long distance travel survey as part of the NTS was stopped after 2000. However, Statistics Denmark has since 1997 collected the Holiday and Business Travel Survey which is the Danish version of the common European Tourism Demand Survey. Furthermore a dedicated long distance travel survey has been conducted in 2010-11 and documented in (L. Christensen & Knudsen, 2015). Results from the Holiday and Business Travel Survey are available in a dissertation (Knudsen, 2015).

(Christensen, 2015) presents a short overview of the results from the European surveys ending up with more detailed results from the Danish surveys.

(Kuhnimhof et al., 2009) report based on Dateline data 0.5-1 journey at distances over 400 km per person per year for most of the countries with Sweden as an exception with 1.4 journeys and Portugal and Greece with only 0.2 and 0.3 journeys, respectively.

(Eugenio-Martin and Campos-Soria, 2013) use another of the few a European-wide datasets, a small cross sectional micro dataset with outbound tourists from the 27 EU countries. They analyse the effect of the economic crisis and show that the citizens are willing to travel longer (abroad instead of domestic) and are less inclined to reduce travel activities when they come from a region with bad climate than from a region with good climate.

When looking to tourism research more data with comparisons between countries are available. They are mainly based on macro variables as number of arrivals to and/or departures from a country, national expenditures on tourism activities or receipts from inbound tourists. (Peng et al., 2015) present a meta-study of income and own-price elasticities based on such macro tourism data. They analyse among others the effect of different methodologies, included variables and geographical localisation of arrival and destination countries. Most income elasticities are over 2, e.g. the income elasticity of intra-European travel is 2.4.

2. TOURISM DEMAND SURVEY DATA

Two cross-country databases are available today, Dateline and the Tourism Demand Survey. Dateline from 2001/02 is a cross sectional database covering Switzerland and 15 member states. On top of being old today (Gomes and Santos, 2004; Kuhnimhof and Armoogum, 2007) shows that the results from Dateline is inconsistent and not in line with the corresponding national surveys.

Table 1 Survey periods and size for the 30 surveys. Furthermore the coverage of age.

Country	ISO	Trips with 4+ night's stay			Sample		Responses		Included age groups
		First year	Last reported survey	Missing years	House-holds	Individuals	House-holds	Individuals	
Austria	AT	1998	2014			43.392		14.000	15+
Belgium	BE	1997	2014		14.996		2.000		15+
Bulgaria	BG	2008	2014			21.059		20.056	15+
Switzerland	CH	2008	2014			Unknown			15+
Cyprus	CY	2002	2014			34.097		23.098	15+
Czech Republic	CZ	2003	2014			47.497		34.889	15+
Germany	DE	1997	2014		55.000	23.000		10.021	15+
Denmark	DK	1997	2014			9.600		6.000	15+
Estonia	EE	2003	2014			10.286		6.032	15-74
Greece	EL	1997	2014				8.771	20.173	15+
Spain	ES	1998	2014		16.576			63.980	15+
Finland	FI	1997	2014			28.300		15.475	15-74 -84 from 12
France	FR	1997	2014			240.000		175.000	15+
Croatia	HR	2004	2014	2005-06		189.037		10.000	15+
Hungary	HU	2004	2014		60.000	Home survey 25.250	39.395 Border survey	23.509	15+
Ireland	IE	1999	2014		55.200	150.696	25.013	68.285	15+
Italy	IT	1997	2014			93.397	16.104	39.948	15+
Lithuania	LT	2004	2014		90.532		62.087		15+
Luxembourg	LU	1997	2014	1997-99 Income				6.000	15+
Latvia	LV	2003	2014		11.765		11.408		15+
Malta	MT	2007	2014		3.200	9.600 residents +9.066 pass		7.168 residents +7.141 pass	15+
Netherlands	NL	1998	2014			8.790		6.327	15+
Norway	NO	1999	2011			No information			16-79
Poland	PL	2003	2014		0,06% of HH in 2012+13 0,8% of HH in 2014		18.000 in 2012+13 75.000 in 2014		15+
Portugal	PT	1997	2014				7.168	19.148	15+
Romania	RO	2004	2014			139.912	34.912	122.576	15+
Sweden	SE	1998	2011	2000-05		No information			15-74
Slovenia	SI	2003	2014	2008 Income		31.350		8.451	15+
Slovakia	SK	2003	2013		7.586	17.412		8.205	15+
United Kingdom	UK	1997	2013			100.000 residents		14.991/ for border no info	15+

Source: http://ec.europa.eu/eurostat/cache/metadata/en/tour_dem_esms.htm

The Tourism Demand Survey on the other hand is collected mandatory from the member states since mid-1990'ies and is improved and extended over the years. Eurostat is documenting the main results in an online publication (Eurostat, 2016) which is replaced annually by data from the year prior to the publication.

This survey is collected continually by all EU Member States, Norway and Switzerland, i.e. actually 30 countries. The included journeys are defined as journeys with overnight stay(s) out of local spatial areas for residents aged 15 or over. Data are delivered every year to Eurostat as tables with indicators of the travel activities. The first countries delivered data in 1995. Since 2002-03 most of the 30 countries have delivered data, see Table 1.

The surveys ask about journeys with 1-3 overnight stay(s) and 4 and more overnight stays on private and professional purposes and on domestic and international travel. Some countries have only included data for 1-3 overnight stay(s) for a shorter period than for journeys with 4+ overnight stays (or they miss intermediate years). For most of the years information on the share of the respondents who have travelled at 1+ and 4+ nights is included too. Same day tourism abroad has been added from 2015.

Data on expenditures at travelling and on how journeys are ordered is furthermore collected (at least since 2012). The number of trips is broken down on main modes, type of accommodation and destination country. The weakness of the Tourism Demand Surveys compared with the National Travel Surveys is that destinations are only mentioned as countries, and distance is not included in the surveys.

Unfortunately, data is only available as simple tables at Eurostat's homepage (http://ec.europa.eu/eurostat/web/tourism/data/main-tables). Eurostat has collected micro data since 2012 but these are not available for research due to confidentiality. The analyses which can be made on the survey data are therefore limited to simple linear regressions and descriptive analyses.

Data preparation

A database is constructed based on data extracted from Eurostat's homepage. It includes number of annual journeys for private purpose distributed on countries, on 1-3 nights and 4 and more night's stay, and on domestic and international journeys. Information about number of inhabitants, GDP per capita and private household consumption per capita is added to the table (extracted from Eurostat's homepage in Euro at 2000 price level) and number of annual trips per capita is calculated. All variables are log transformed.

Data quality

The surveys are collected by different methodologies (see Table 2). The two main survey types are home based personal interviews (Face-to-face or CAPI when data collection is Computer Assisted Personal Interviews) and telephone interviews (CATI when Computer Assisted Telephone Interviews) and a few as postal surveys.

Table 2 Data collection methods and important brakes in the time series

Country	ISO	Data collection method	Comments about brakes in comparability
Austria	AT	CATI	Only annual interviews
Belgium	BE	WEB+Postal from 2013 Postal before	
Bulgaria	BG	Household survey (method?)	The sample in 2008-11 is based on 2001 census
Switzerland	CH	CATI	
Cyprus	CY	CATI	Data are based on other sources 2002-11
Czech Republic	CZ	CAPI 73%, CATI 27% at repeated interviews	
Germany	DE	CATI	
Denmark	DK	WEB, CATI	Change in questionnaire in 2008 resulting in more VFR trips. Correction in weights and grossing up procedures from 2010
Estonia	EE	CATI 2014, CAPI+CATI before	
Greece	EL	Face-to-face	
Spain	ES	CAPI before travelling, CATI collect info about journeys after 3 months	
Finland	FI	CATI	
France	FR	Postal, together with 5 other surveys	
Croatia	HR	CATI	
Hungary	HU	Face-to face home survey + CAPI border survey	Correction in weights and grossing up procedures from 2012
Ireland	IE	Postal. Supplemented with a border survey for grossing up	Change in weights and grossing up 2010. Large correction for domestic trips
Italy	IT	CATI 1997-13, CAPI from 2014	Correction in weights and grossing up procedures from 2012
Lithuania	LT	Face-to-face	
Luxembourg	LU	CATI	
Latvia	LV	CAPI+CATI from 2011, Border survey earlier	Domestic is missing before 2011
Malta	MT	Border survey before 2011 + Face-to-face from 2013	Only international trips before 2011. 2011-13 a border survey is supplemented by asking for 3 trips in the labour force survey. From 2014 a separate survey for all trips
Netherlands	NL	CAWI	From 2002 international VFR are included. From 2012 domestic VFR are
Norway	NO	No information	Since 2008 calculated using quarterly data from the National Travel Survey (only conducted every 4th year)
Poland	PL	Face-to-face, Information about journeys are collected by PAPI after the journeys in 2014 CATI before 2014	If respondent has no trips a new respondent is visit to collect trips (made systematic)
Portugal	PT	CAPI before travelling, Journeys collected by CATI after 3 month	
Romania	RO	Face-to-face	
Sweden	SE	No information	From 2013 data are not delivered to Eurostat
Slovenia	SI	CATI	
Slovakia	SK	Face-to-face or CAPI, CATI	
United Kingdom	UK	Border survey + CAPI as part of Omnibus	

Source: http://ec.europa.eu/eurostat/cache/metadata/en/tour_dem_esms.htm

Some of the countries interview only one person in a household (randomly chosen) about his or hers travel activities. Others make a full household survey either by

collecting data from each member or by interviewing one/a few members and get information about the rest by proxy interviews (even when they have not participated in the journey).

Some of the countries conduct a border survey to collect data about outbound travel and supplement this with a household survey. Some of the surveys are combined with other surveys (e.g. the labour market survey or the household expenditure survey) but most are stand-alone surveys. A few countries collect data about the household and instruct about the method before the travelling period and collect travel data after 3 month. Some collect data once a year, most every 3rd month and a few every month (same only about one month travel period). The frequency and the period covered is influencing the annual number of trips and the seasonality due to a memory recall effect. The sampling frame is also affecting the representativity.

Most countries have brakes in the data collection now and then due to changes in the questionnaire, data collection methodology, and/or weights and grossing up procedures. Finland mentions that a change in grossing up results in an increase in number of trips at 1-3%. Ireland shows a decrease in domestic trips at 18-25% but in international trips less than 1.5%.

The number of respondents is differing substantially between the countries (see Table 1). Maximum is France and Romania which collect more than 100,000 interviews every year and minimum is Belgium with 2,000 household interviews and Denmark, Estonia, Luxembourg, and the Netherland with around 6,000 individual interviews. In general, a high number of interviews and a high response rate results in more precise results. However, for countries with a small share of residents performing a journey during the data collection period the precision is lower. This makes especially a problem for Bulgaria which collects 20,000 interviews but only reports 2% travelling (400 journeys of which some are combined business and private journeys so that categorising might be inconsistent over the years). Other countries which have few interviews report at least 1,700 journeys abroad with 4+ nights which offers a much higher precision in the number per inhabitant.

The general rule for the Tourism demand survey is that it should be conducted for a representative sample of inhabitants from 15 years and up. However, some countries have included other age groups. However, 4 countries have only included a smaller age group, typically 15-74 years old. The number of trips per respondent has been calculated by grossing up the number of trips to inhabitants in the interviewed age group, but divided by the full population at 15 years and up. By missing journeys from especially the age group 75-79 years old is generating a bias which is difficult to compensate for. Eurostat has together with the countries

assessed that the number of trips per inhabitant is less biased by dividing by the full population than with a reduced number of persons because the elderly are travelling less than the younger age groups. Finland has in 2012 increased the upper age limit from 74 to 84 years old. The Finish data documentation at Eurostat's homepage mentions that the increase has resulted in a 1-3% increase in the number of trips for the respondents as a whole.

Purpose of the paper

The purpose of the paper is to uncover the development in the European's holiday travel activity during the last 17 years with focus on the effect of differences in economy of the countries. We want to find out if there are some more overarching differences in the travel activity and the development in this by different groups of countries. In the discussion we present suggestions for the reasons for differences. One of the aims is through comparison between the countries to identify possible limits to the increase in long distance travelling.

Main methodology

This paper only concerns private journeys business travel being excluded. Furthermore, the analyses are reduced to private journeys abroad with 4 or more night's stay (shortened 4+ nights). The reason for the choice to focus at international 4+ night's journeys is that these are mainly holiday journeys whereas shorter trips and domestic trips include many visits to friends and relatives (VFR) and visits to vacation homes (at least in some of the countries). These trips are probably only little affected by fluctuation in national economy and may even be a substitute for an international holiday journey.

The analyses of the private international journeys with 4+ nights are investigated by regression analyses. Two questions are addressed, what is the income elasticity, and what is the level in the number of journeys when considering the difference in economy in the countries.

Furthermore, a descriptive analysis is made of the share of the population who have been travelling during the year. Both the share which has been travelling at journeys with 4+ nights abroad and with only 1-3 nights is presented. This is compared with the share which has only been travelling domestic.

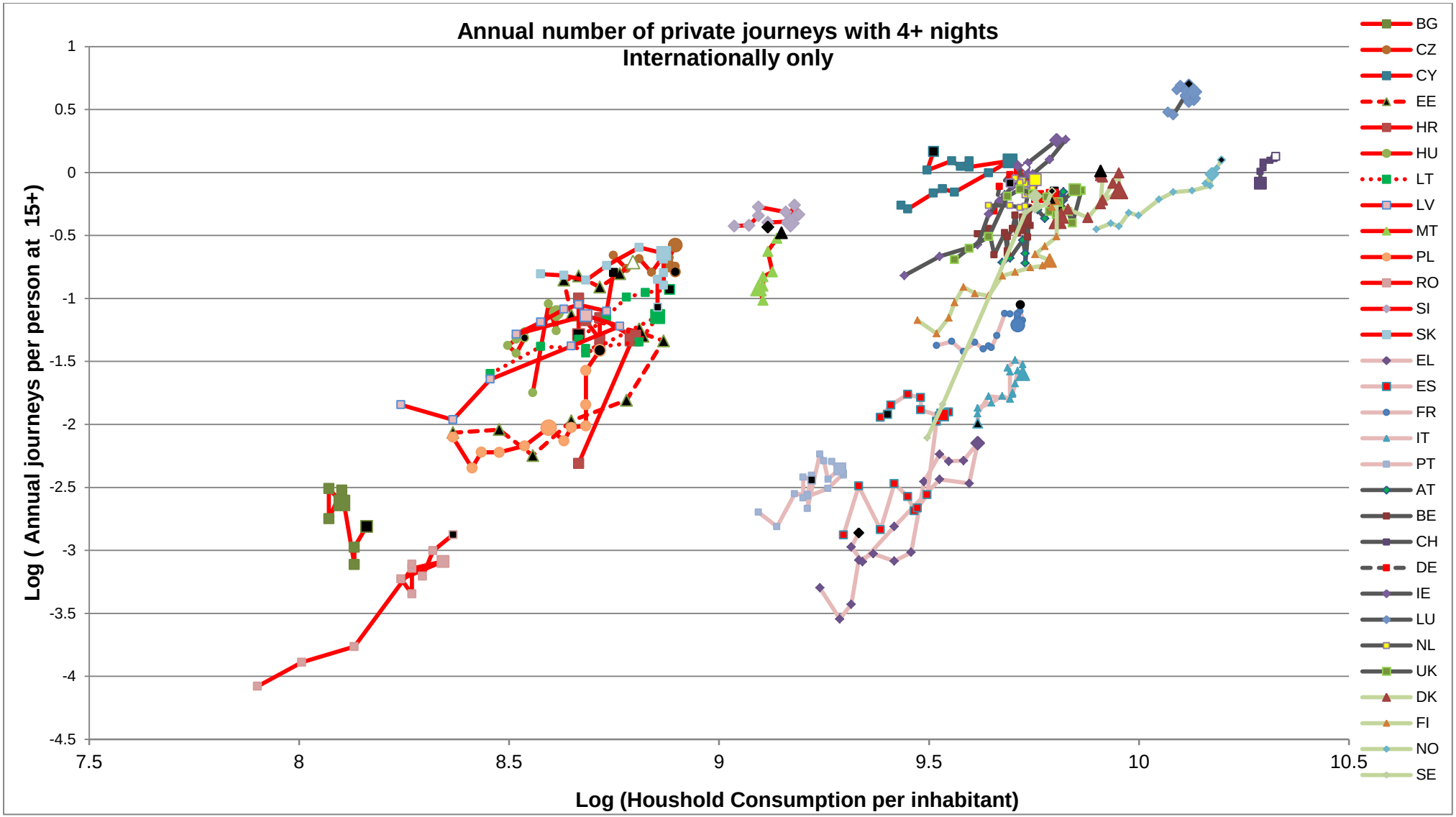

Figure 1 The annual number of international journeys per person with 4+ nights as function of household income

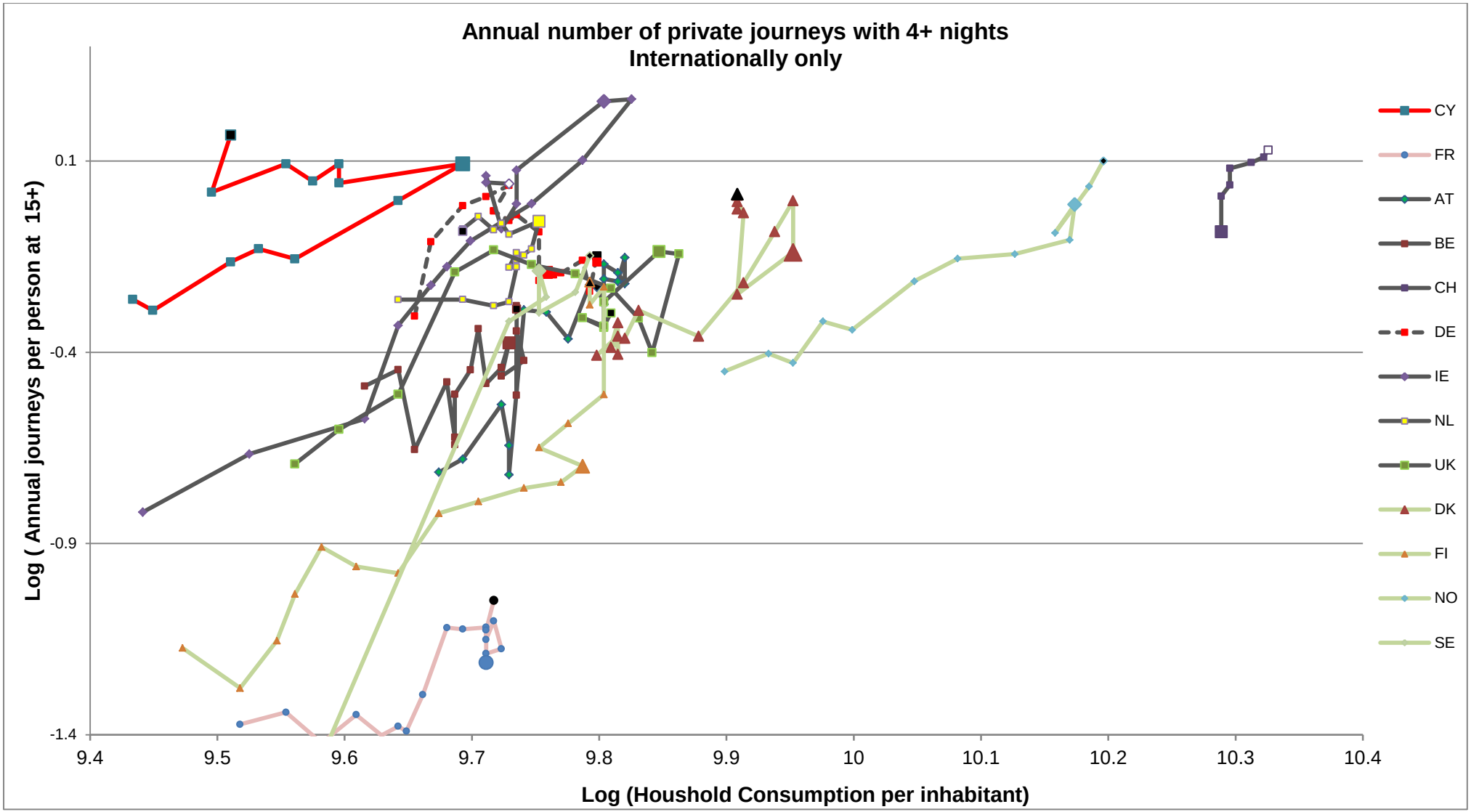

Figure 2 A selective enlargement of Figure 2

3. ANALYSES OF TRAVEL ACTIVITY

Figure 1 (with a selective enlargement in Figure 2) illustrates a complex picture of development in travel activity for each country as the logged value of annual journeys abroad with 4+ nights per inhabitant at 15+ year old as function of the income per inhabitant in the actual country. In the curves the year 2008 is shown with a bigger mark than the marks for the rest of the years. Furthermore, the latest year (2014 for most of the countries) is shown by a black mark (white for Estonia, Ireland, and Switzerland) so that it is possible to see the direction of the development.

The overall picture is that the main part of the new member states (the former Eastern European countries plus Cyprus and Malta) are crowding in one group (marked with red curves) at a lower income level than the old member states. Inhabitants in Cyprus, Malta and Slovenia are travelling more than the rest and Romanians and Bulgarians very little. The old member states (including Norway and Switzerland) seem to be differentiated into a group of Mediterranean countries at a low travelling level (marked with pink curves) and a crowd of Middle European countries (marked with dark grey curves) travelling much more. The four Nordic countries (marked with green curves) represent a separate group which we will come back to.

The following regression analyses will go into more details to examine this picture. The results are in the following presented in tables ordered by the 2013 income in the 4 mentioned groups. Table 1 and Table 2 were ordered alphabetic after the acronym (ISO).

As income variable can be used GDP per inhabitant or the household consumption per inhabitant. The decision on which is most relevant for travel activity cannot be based on statistical methods. The best income variable would be the one with the largest growth rate because it makes most certainty in the elasticities. However, the growth is largest in GDP in some countries and in household consumption in others, resulting in the same average growth rate taken over all countries. Instead elasticities calculated by the two income variables are compared. In the period from 2008 to 2014 the elasticity is significantly different from 0 for half of the countries when measured on household consumption whereas it is only the case for 1/3 of the countries when it is measured by GDP. It is higher calculated on household consumption than on GDP for 10 of the old member states and only smaller for 5. For the new member states it is higher for 5 countries and smaller for 5. In the period from 1997/2003 to 2008 the elasticity is significant for most of the

countries. It is insignificant for 3 countries measured by GDP and only for two when measured by household consumption. Thus, in both periods household consumption seems to be the most important driver of the 2 measures for number of international journeys, but the difference is small. Household consumption per inhabitant is chosen as the economic measure in the paper.

Income elasticity

The income elasticity is estimated for each country or groups of countries by a simple regression model in which log to the number of journeys from the actual country is calculated as a linear function of the log to the country's household consumption per inhabitant. This way the estimated parameter is directly the income elasticity. In case the model includes more than one country a dummy is included for each country. The estimated coefficient to the dummy is regulating the level in number of trips per inhabitant between the countries whereas all included countries have the same elasticity.

Table 3 shows the estimated income elasticities. The first step has been to group countries for which the elasticities are not significantly different. This has resulted in 11 countries for which the elasticities could not be grouped with any other country. The rest of the 19 countries are accumulated into 7 groups for which the elasticities are not significantly different. Most of the new member states can be grouped into groups with 2, 3 or even 5 countries. For the old member states there are a few groups with 2 countries and only one group with 3 members. No group includes both new and old countries. The reason why it has been easier to group the new member states is that they maximum includes 11-13 years and some only 7-8. For the old member states the time series represent 16-18 years except for 3 countries.

Bulgaria which has only collected data from 2008 has as the only country a negative elasticity and a big drop in travel activity even though the economy increased. Two country groups (Germany/the Netherland and Czech Republic/Slovakia) and one country (Luxembourg) have an income elasticity not significantly different from 0. Romania also has a high elasticity whereas it is between 1.5 and 2 for the rest of the new member states.

Income elasticities over 2 are found for the Mediterranean countries except for France, the 4 included Nordic countries, Ireland, and Switzerland. For the rest of the Middle European countries it is between 1.5 and 2.

Table 3 Results from linear regression. 2013 (2012). Household income and journeys abroad with 4+ nights. Predicted journeys by estimated model

Country group	ISO	Result of estimation				Household Consumption p.p.		Journeys Surveyed	Prediction of journeys abroad		
		Income Elasticity	Standard error	Dummy for ISO	Standard error	2004	2013*	2013*	Journeys Predicted 2013*	With an income level at 13,360 EUR	With an income level at 36,320 EUR
New member states											
BG	BG	-4.21*	2.03			2,200	3,400	0.05	0.06	0.0002	0.0000
RO	RO	2.59***	0.21			2,300	4,100	0.05	0.05	0.98	13.06
HU, LV, SI	HU	1.79***	0.24	0.08	0.15	5,100	5,000	0.24	0.25	1.47	8.77
CY,MT,EE,LT,HR	HR	1.86***	0.40	0.15	0.21	5,500	5,800	0.37	0.23	1.11	7.14
PL	PL	1,65***	0,44			4,300	5,900	0.21	0.16	0,62	3,26
HU, LV, SI	LV	1.79***	0.24	0.02	0.14	3,800	6,200	0.33	0.35	1.39	8.27
CY,MT,EE,LT,HR	EE	1.86***	0.40	0.21	0.22	4,800	6,400	0.45	0.30	1.17	7.56
CY,MT,EE,LT,HR	LT	1.86***	0.40	0.25	0.21	4,200	6,800	0.39	0.35	1.23	7.92
CZ, SK	SK	0.02	0.25	0.00	0.00	5,300	7,000	0.34	0.45	0.46	0.47
CZ, SK	CZ	0.02	0.25	0.08	0.04	6,300	7,200	0.47	0.49	0.50	0.51
HU, LV, SI	SI	1.79***	0.24	0.00	0.00	8,400	9,100	0.67	0.69	1.36	8.12
CY,MT,EE,LT,HR	MT	1.86***	0.40	0.00	0.00	8,500	9,300	0.59	0.49	0.95	6.14
CY,MT,EE,LT,HR	CY	1.86***	0.40	-0.08	0.21	12,700	13,300	1.02	0.87	0.88	5.67
Mediterranean countries											
ES, PT	PT	2.47***	0.71	0.00	0.00	10,000	9,900	0.09	0.08	0.17	1.95
EL	EL	3.34***	0.37			12,800	11,100	0.05	0.04	0.08	2.17
ES, PT	ES	2.47***	0.71	-0.29	0.18	13,000	11,900	0.14	0.09	0.12	1.45
CH, IT	IT	3.16***	0.49	0.00	0.00	16,300	15,000	0.15	0.15	0.10	2.37
FR	FR	1.63***	0.28			15,500	16,500	0.32	0.31	0.22	1.13
Middle European countries											
DE, NL	NL	-0.22	0.42	0.00	0.00	16,800	16,200	0.93	0.87	0.91	0.73
IE	IE	3.10***	0.20			16,000	16,500	1.05	0.93	0.48	10.77
AT, BE, UK	BE	1.81***	0.27	-0.04	0.04	16,100	16,900	0.76	0.67	0.44	2.69
DE, NL	DE	-0.22	0.42	0.03	0.03	16,600	18,000	0.86	0.88	0.94	0.75
AT, BE, UK	UK	1.81***	0.27	0.00	0.00	17,700	18,200	0.74	0.80	0.46	2.81
AT, BE, UK	AT	1.81***	0.27	-0.07	0.04	17,000	18,300	0.81	0.76	0.43	2.62
LU	LU	1.64	0.90			24,800	24,100	1.93	1.78	0.68	3.49
CH, IT	CH	3.16***	0.49	-0.19	0.30	28,100	30,400	1.12	1.12	0.08	1.96
Nordic countries											
FI	FI	2.55***	0.30			15,400	17,900	0.76	0.61	0.29	3.71
SE	SE	6,88***	0,30			15,700	18,100	0.86	1.04	0,13	125,54
DK	DK	2.53***	0.39			18,600	20,100	1.01	0.88	0.31	3.96
NO	NO	1,65***	0,11			22,000	27,700	1.11	1.07	0,32	1,67

Level of significance: * <5%, ** <1%, *** <0.1% * NO, SE 2012

The tendency in the development seems to be lower elasticities in the period after 2008 than before as it can be seen in Table 4. However, only for four of the countries (Poland, Hungary, Sweden and Norway) the elasticity is significantly different between the first and second period. For Hungary and Sweden as suggested a large decrease from the first to the second period is observed. However, for Poland the elasticity is 0 in the first period and high in the second and for Norway the elasticity increases too.

A main reason for the elasticities to be statistically similar in the two periods for the rest of the countries with information is a high standard deviation in the

second period due to few observations (maximum 6) and an uneven reaction to the crisis. For some countries a drop in income is as it should be expected followed by a decreasing trip frequency and when the income again goes up the travel frequency is increasing, see for instance the three Baltic countries, Ireland and Cyprus (Figure 1). For several of these countries the drop in the travel activity is smaller than in economy. However, the opposite is also the case for some countries.

Table 4 For the periods before 2008 and from 2008 is shown the annual increase in consumption and trips. Estimation of elasticities country by country is shown too

		Up to 2008			**From 2008**		
		Annual increase in			Annual increase in		
	ISO	Consumption	Trips	**Elasticity**	Consumption	Trips	**Elasticity**
New member states							
Bulgaria	BG	7,4%	n.a	n.a.	**1.0%**	**-3.1%**	-4.21
Romania	RO	11.7%	28.1%	2.40***	0.4%	3.6%	2.80***
Hungary	HU	1.4%	17.3%	9.82***	**-1.3%**	**-3.3%**	2.42***
Croatia	HR	4,6%	n.a		-2.1%	0.3%	-1.38
Poland	PL	**4.7%**	**1.5%**	0.64	2.1%	10.8%	4.95**
Latvia	LV	9.2%	15.2%	1.55***	1.1%	5.9%	1.46***
Estonia	EE	7.7%	14.2%	1.64***	-0.3%	9.8%	-0.21
Lithuania	LT	10.5%	12.0%	0.87***	0.5%	3.7%	1.89***
Slovakia	SK	**6.0%**	**3.3%**	0.80***	**-0.3%**	**-8.2%**	14.35*
Czech Republic	CZ	**3.0%**	**1.7%**	0.56	**0.0%**	**-3.5%**	1.32
Slovenia	SI	**2.7%**	**0.5%**	1.01*	-0.9%	-0.5%	1.37**
Malta	MT	1,0%	n.a		0.9%	7.6%	8.22***
Cyprus	CY	5.0%	8.0%	1.40***	-3.0%	1.3%	0.00
Mediterranean country							
Portugal	PT	1.9%	2.7%	2.31***	-1.3%	-0.6%	1.17
Greece	EL	3.5%	11.0%	3.84***	**-4.6%**	**-11.2%**	2.49***
Spain	ES	2.1%	9.0%	3.46***	-2.0%	0.2%	0.23
Italy	IT	0.8%	3.5%	3.05***	**-1.5%**	**-8.0%**	4.31***
France	FR	**1.8%**	**1.5%**	1.37***	0.1%	2.7%	3.18
Middle European country							
Netherlands	NL	1.1%	2.1%	1.58**	-1.0%	-0.4%	0.16
Ireland	IE	3.7%	11.3%	3.01***	**-1.2%**	**-3.5%**	2.58***
Belgium	BE	1.0%	1.0%	1.08	0.1%	1.5%	3.50
Germany	DE	0.9%	1.0%	0.55	**0.7%**	**0.5%**	0.57
United Kingdom	UK	2.5%	4.8%	1.37***	**-0.8%**	**-3.2%**	3.29***
Austria	AT	1.3%	4.5%	4.19***	0.0%	1.1%	1.77
Luxembourg	LU	0.8%	2.0%	2.25***	-0.5%	0.8%	-0.49
Switzerland	CH	0,9%	n.a	n.a.	0.6%	3.6%	3.89***
Nordic countries							
Finland	FI	2.9%	4.4%	1.73***	0.1%	8.4%	6.93*
Sweden	SE	2.4%	19.1%	7.36***	1.3%	1.3%	1.73
Denmark	DK	1.4%	2.5%	2.03***	-0.7%	2.5%	-2.03
Norway	NO	3.1%	5.0%	1.49***	0.8%	3.9%	4.86***

Level of significance: * <5%, ** <1%, *** <0.1%

In Table 4 the average annual change in economy and in number of journeys is shown for the two periods. With bold is marked countries for which travel activity has a lower increase or bigger decrease than change in economy. In both periods these observations are mainly seen in the new member states and in the last period in the Mediterranean countries too. In the first period

some of the countries have a higher growth rate in economy than in number of journeys. In the second period a small drop in economy can be followed by a big drop in travel activity.

Level of travelling

The estimated regression models are used to calculate a predicted annual number of journeys based on common income level. Two different logged income levels are chosen, 9.5 corresponding to 13,360 EUR at 2000 price level which is a typical income level for Middle European countries during the investigated period, and 10.5 corresponding to 36.320 EUR which is chosen to illustrate the effect of a future income increase (20% higher than Switzerland and about the double of the actual level of today's Middle European countries). The results are shown in Table 3 together with the income levels for 2003 and 2013 and the corresponding actual and predicted travel level with the 2013 economy.

The actual travel activity is today around 0.5-1.0 journey per inhabitant with 4+ nights abroad for the old member states excluding the Mediterranean countries. It is higher than one for Luxembourg, Switzerland and Norway. With a common income level lower than today's the level of travel activity would be more even. Countries with a low elasticity would have a higher trip activity level than the rest (Germany and the Netherland) and countries with a high elasticity would have a low elasticity (The Nordic countries and especially Switzerland).

At the other end, the lower income Mediterranean countries are found with 0.04-0.15 journeys per traveller today and only a little higher with the common income level at 13,360 EUR. France has with 0.32/0.22 a little higher level than the rest of the Mediterranean countries but still a lower level than the old member states even though the income is fully at Middle European level.

The new member states are today travelling a little less than the old member states with 1/4 to 2/3 journeys per inhabitant per year except for Romania and Bulgaria which are at level with the Mediterranean countries and Cyprus which is at level with the Middle European countries. However, the income in the new member states is much lower than in the old member states. With an income level at 13,360 EUR the travel activity would for most of the countries be higher than the actual level in the old member states. Only Czech Republic and Slovakia (with elasticity at 0) will be at level with the rest of the old member states and Bulgaria would face no travel activity if the negative travel rate goes on.

If the increase in travel activity goes on at the actual level a future income level only 20% higher than Switzerland's actual level would result in typically 6-8 international journeys per inhabitant in the new member states. Romania would be at a higher level (13), Czech Republic and Slovakia at the same level as today and Poland in between with 3 journeys.

The Middle European countries would make 2.5-3 journeys per inhabitant with Ireland at a much higher level (11) and Luxembourg at a slightly higher level (3.5). Germany and the Netherlands would due to the income elasticity at 0 stay at the actual level. Even though Switzerland has a high elasticity the number of journeys would only have increased to 2 because the increase in income is limited.

The Nordic countries would get up to close to 4 journeys with Sweden at an extreme and Norway at a much lower level in line with Switzerland due to a high actual income and an average elasticity.

The Mediterranean countries would due to high elasticities get up to 1.5-2.5 which is still less than most of the old member states. France would only get up to a little more than1 journey per inhabitant.

Share of people travelling

The travel activity is obtained by two factors, the share of the population travelling and the number of journeys per person travelling. Table 5 presents for the period 2012-14 the share of the population at 15+ years old that have been travelling. This share is divided into those who have been travelling abroad and those who have only been travelling domestic. Those who have been travelling internationally are subdivided into those who have been travelling for 4+ nights and those who only been travelling for 1-3 nights. Similar with those who have only been travelling domestic.

The share that is travelling is varying much between the countries. For the Middle European countries the share goes from a little more than 1/3 and a little more than 2/3 that have been travelling abroad with 4+ nights. The Nordic countries are at level with the Middle European countries.

For the 4 Mediterranean countries the share having travelled for 4+ nights is only 5-10% with France at 20%.

Only for 2 of the new countries Romania and Bulgaria the share having travelled is lower (1-2%). For Poland, Hungary and Croatia the share is low too, around 15%. The share is higher for the Baltic countries (19-29%), Czech

Republic and Slovakia (34/27%), and for Cyprus and Malta (30-31%). For Slovenia the share at 43% is fully at level with many old member states.

Table 5 Percentage of the respondents who are travelling annually at different durations and type of destination in 2012-14. Furthermore, number of journeys per respondent and per respondent who travelled. Finally a comparison between the share of respondents travelling before and after 2012

2012-14		Percentage of respondents travelling					Outbound 4+ nights		Difference in share 2012-14 compared to 1997-11 4+ nights	
		Outbound		Domestic only			Journeys per			
Country	ISO	4+ nights	1-3 nights only	4+ nights	1-3 nights only	All journeys	Inha-bitant	traveller	Outbound	Domestic only
New member states										
Bulgaria	BG	2	1	12	7	22	0.05	2.57	0.68	0.89
Romania	RO	1	0	9	13	24	0.05	3.89		
Hungary	HU	15	3	19	14	52	0.25	1.66	1.05	0.75
Croatia	HR	12	9	21	7	49	0.32	2.75	0.97	0.92
Poland	PL	12	3	23	13	51	0.20	1.67	1.13	0.99
Latvia	LV	19	7	6	17	49	0.38	1.97	1.56	0.64
Estonia	EE	29	13	10	12	65	0.45	1.53	1.35	1.13
Lithuania	LT	21	9	5	21	55	0.38	1.82	0.99	0.74
Slovakia	SK	27	3	14	11	55	0.41	1.51	0.88	0.88
Czech Republic	CZ	34	6	26	12	77	0.47	1.39	1.15	0.98
Slovenia	SI	43	6	8	5	63	0.67	1.55	0.94	0.75
Malta	MT	30	4	7	11	51	0.58	1.97	0.88	1.03
Cyprus	CY	31	7	8	17	63	1.10	3.55		
Mediterranean country										
Portugal	PT	7	2	18	11	38	0.08	1.19	1.03	0.92
Greece	EL	4	1	25	6	36	0.05	1.17	0.91	0.71
Spain	ES	9	2	29	13	53	0.15	1.61	1.09	0.77
Italy	IT	8	4	25	6	43	0.15	1.81	0.63	0.77
France	FR	21	3	42	6	72	0.33	1.59	1.07	0.98
Middle European coun.										
Netherlands	NL	55	4	17	6	83	0.93	1.69	1.03	1.10
Ireland	IE	44	8	9	11	72	1.05	2.37	1.00	0.52
Belgium	BE	46	5	3	2	56	0.70	1.54	1.10	0.58
Germany	DE	48	5	16	8	77	0.83	1.73	0.99	0.73
United Kingdom	UK	36	4	21	4	66	0.73	2.01	0.99	0.98
Austria	AT	50	7	9	10	76	0.83	1.66	1.13	0.77
Luxembourg	LU	71	10	0	0	82	1.95	2.73	1.09	1.26
Switzerland	CH	65	8	9	2	83	1.12	1.73	1.03	0.86
Nordic countries										
Finland	FI	38	19	29	3	89	0.79	2.08	1.26	1.04
Sweden	SE	40	10	24	2	77	0.80	1.99	1.02	0.71
Denmark	DK	55	5	19	3	81	1.00	1.83	1.06	1.30
Norway	NO	64	7	12	1	85	1.02	1.62	1.22	0.61

For most of the countries the share only travelling abroad for a weekend / few days (1-3 nights) is very low and is only increasing the share having travelled abroad with a few percent. Exceptions are Luxembourg and Sweden at 10% and Finland and Estonia from which 19% / 13% have only been travelling abroad for a few days.

For the Mediterranean countries and especially France a higher share is instead travelling for domestic holidays. The share 18-42% travelling for 4+

nights is much higher than the share only travelling for 1-3 nights. In France nearly half of the population is only travelling at domestic weekend or holiday.

For the new member states a little less than for the Mediterranean countries are travelling domestic only. At the lowest end is found Bulgaria and Romania and the small island Malta with 18-21% only travelling domestic followed by the 3 Baltic countries and Cyprus (22-26%). Except for Bulgaria for all these countries the highest share of the respondents are only travelling for 1-3 nights. For the rest of the countries (from Poland to Croatia) 25-38% of the respondents are travelling only domestic and the highest share is travelling for 4+ nights.

For the Middle European countries the share that has only travelling domestic is up to 21%, with Luxemburg and Belgium in the very low end and Germany, the Netherlands and United Kingdom in the top end with 16-21% when only considering journeys with 4+ nights and 19-25% when including the short duration trips.

For two Nordic countries, Finland and Sweden the share only travelling domestic (both short and long duration) is high 32%/26%. For Denmark it is with 22% at level with the rest of the old member states in the high end and for Norway it is in the lower end at level with Switzerland.

The very different share of people travelling abroad is resulting in less variation in number of journeys when calculating this per person travelling at outbound journeys with 4+ nights, see again Table 5. Except for Greece and Portugal with 1.17/1.19 journeys per traveller the difference is small between the Mediterranean countries and most of both new and old member states. The typical level is between 1.5 and 2 journeys per travelling person.

The number of journeys per traveller is over two for Luxembourg (2.73), Ireland (2.37), Cyprus (3.55), and partly United Kingdom (2.01) and Finland (2.08). Furthermore it is over two for Romania (3.89), Bulgaria (2.57) and Croatia (2.75) of which especially the two former have very few respondents travelling at all.

The last columns in Table 5 shows a rough picture of the change in participation in travelling with an increasing share travelling internationally and a decreasing share travelling domestic only. But again there is some variation from the general picture.

Table 6 Share in percent of all Journeys abroad to the listed destination country in 2014. 5 main destinations [2]2013 Source: (Eurostat, 2016)

Destination	BG	RO	HU	HR	PL	LV	EE	LT	SK	CZ	SI	MT	CY	PT	EL	ES	IT	FR	NL	IE	BE	DE	UK[2]	AT	LU	CH	FI	SE	DK
Albania															21														
Austria		8	15	11						10	6								6			13				8			
Belarus								10																					
Belgium																		7	8						10				
Bosnia				19							5																		
Bulgaria		12																											
Croatia					6				16	14	57													10					
Czech Republic			11		5				18																				
Denmark																												9	
Estonia						7																					23		
Finland							16																					9	
France												6		15		17	16		12	8	34	7	14	4	21	15			
Germany	6		15	11	20	7	4	6			4	5	3	6	7		11	7	19		6		4	21	18	20	5	9	18
Greece	28	19								5			37																
Hungary		10							11																				
Italy	6	24		9	8					12	6	30		5	12	11		12			7	11	5	18	6	19	4		7
Latvia							13	13																					
Lithuania						12																							
Morocco																6													
Netherlands																					9								
Poland								8																					
Portugal																12				5									
Romania			8										3				4												
Russia						10	10						5																
Slovakia			10							18																			
Slovenia				11																									
Spain												4		33			13	17	10	20	11	11	21	5	7	9	9	12	9
Sweden							13																				21		14
Turkey	26														9							6							
United Kingdom	5				9	7		12				27	24	8	8	9	9	7		35								7	7
USA																				6			5						
Included share	72	73	58	62	47	43	57	49	46	59	78	72	72	67	57	56	52	51	56	75	67	48	50	58	63	70	62	46	55

4. DISCUSSION

The interest of this paper is first of all to understand the development in travel activity and to identify tendencies to ongoing increase in long distance travelling or if there is signs for a future saturation.

As the analyses are based on few indicators we will in the discussion include some more speculative suggestions for further understanding.

The resulting income elasticities

The fact that only summary tables with indicators have been available so that the estimation of income elasticities is based on 6-18 observations per country makes the results uncertain. When the countries are aggregated in groups with 2-5 countries per group the results get more certain, especially for the new member states and Switzerland with shorter time series. At the other hand it would be a mistake to reject the calculated elasticities as impossible. The correct is to see them only as indications of a level as the reported standard errors also show.

For one country, Bulgaria, the elasticity is calculated to be negative. However, as mentioned in section 2 the result is based on a dataset with a low precision. Therefore, for Bulgaria the elasticity cannot be trusted. For Romania the share of people travelling is even lower than for Bulgaria but the survey is much larger and it is organised so that it takes care of the low share travelling.

The resulting income elasticities are generally high, over one which indicates that travelling abroad in both new and old member states is a luxury good. For a few countries the elasticity cannot be shown statistically to be different from 0. Income elasticities around 1.5-2 for international travel is in good accordance with a Danish study based on micro data (a paper in Knudsen, 2015). A meta study of papers based on tourism data (Peng et al., 2015) indicates even higher income elasticities for international travel, especially for Europe.

The development in the main country groups

Three main groups of countries have been identified: The new member states, the Mediterranean countries, and the rest of the old member states. This latter group we will name the Western European countries. In each of these groups there is some variation which can be used to identify some further subgroups.

We have tried to identify a fourth main group consisting of the four Nordic countries so that the group of the Western European countries can be subdivided into a Middle European and a Nordic country group. However, these two groups can also be seen as subgroups to the overarching Western European group.

The overall picture is that the Western Europeans are travelling most abroad. Except for two countries the residents in the former European countries are travelling in the middle and residents from the Mediterranean countries least. When considering the income level the travel activity in the new member states is very high. The income elasticities which are in a realistic level today indicates that if the economy expands to a level a little higher than for Switzerland today the number of annual journeys per inhabitant would increase to 10 times as many journeys as for the Middle Europeans have today. With a similar economic level the Western Europeans will 'only' double their travel activity.

The presentation of the share of the population travelling at long distance private journey shows however, that an income elasticity only including the number of journeys per inhabitant is not offering a correct picture of the development. It is needed to consider both the share that is travelling at long distance travel and the travel frequency of those who travel.

Today 80-90% of the inhabitants in the wealthiest European countries travel abroad. This share is probably the maximum realistic also in a far future because it also includes the 10-20% percent of the old population who might not travel much. Today these 80-90% makes up to 2 annual journeys with 4 or more nights stay each. If the predicted level of the travel activity in the new member states, see Table 3, should be realised each person having a journey would travel abroad 10 times a year i.e. a week nearly each month during the year in 70 years of their life - in average. It doesn't sound realistic to us.

In the following we will look more into details for each country group and discus the indications for the development.

The Mediterranean countries

Inhabitants in the Mediterranean countries are actually travelling very little abroad. The share of the population traveling abroad is much lower than for the other country groups. Instead a third to a half of the population is only travelling domestic and most at holidays with 4+ nights. Overall the share travelling is at level with the new member states. The income elasticity for

journeys abroad with 4+ nights is generally high. In the last period with economic crisis especially the Greeks and Italians have cut back their travel activity abroad.

France as the country with the highest income level is a bit different from the rest with a higher share travelling abroad and a lower income elasticity but an even higher share having domestic holidays. The share of the population that is travelling for all destinations all together is at level with the Western European countries around the same income level.

The three Mediterranean countries: Spain, France, and Italy are the top 3 holiday destinations for the Europeans in the mentioned order (Eurostat, 2016). It is therefore not surprising that the residents' own country is the favoured destination for the residents too. However, at least for France, Italy and Spain with the highest income the number of journeys abroad with 4+ nights per person travelling is at level with several Western European countries at all income levels. This is indicating that that the main development probably will be an increase in the share travelling abroad when the economy expands again. Even with the relatively high income elasticity for the countries the pace of the increase will possibly be low because the starting level is very low. It will therefore be far into the future before the actual western European level will be reached.

The Western European countries

For three Western European countries the income elasticity for travelling abroad with 4+ nights is not significantly different from 0: Germany, the Netherlands and Luxembourg. For Germany 77% of the respondents have been travelling, for the two others 82-83%. For Luxembourg 81% have been travelling abroad and the level of trips pr traveller is high, 2.7. The reason for the actual very high level is the high share of high income immigrants who are often travelling home. The low elasticity (it might be greater than 0 as the standard error is high) and the already very high income level indicates that Luxembourg represents a level of travelling which could be the maximum at least with an organisation of the society as we have today.

The Nordic countries have together with Switzerland a high income elasticity at more than 2.5 (Norway only after 2008) which indicates that the increase in international travelling may go on. For Denmark, Sweden and especially Finland the share of inhabitants only travelling domestic is higher than for the rest of the Western European countries. This is first of all due to the high share of inhabitants who owns a vacation home or have access to one owned

by family or friends. Many holidays and especially (long) weekends are therefore taking place there. But a Danish survey shows that many people with access to a vacation home is still travelling abroad for holidays or weekends. The high income elasticities therefore indicate that the number of trips abroad will go on increasing for a long time.

Norwegians are not having access to vacation homes to the same degree as the neighbours and the share travelling abroad is higher, in line with the Swiss, 64-65%. The income elasticity is for both high since the crisis, 3.2%/4.9%. This might very well be due to decreasing air travel tickets, especially for Norwegians who have to fly to most international destinations and who have got a successful national low cost airline during the period. When only including income in the analyses the effect of price changes is not considered. The increase in international travel activity will possibly not go on for ever, but an increase to a level with 70% of the population travelling abroad annually with 2 journeys per traveller is probably not unrealistic. 2 journeys is less than what is the case for Luxembourg but with only few high income immigrants at least in Norway, a little lower number of trips per traveller is realistic.

For the rest of the Western European countries this might also be a possible saturation level. However, for some of the countries the development will go much slower, e.g. for United Kingdom for which a language seems barrier play a role for a part of the population who prefer domestic destinations. Both UK, Germany and France are large countries with many attractive destinations in the country.

The new member states

Today, a higher share of the inhabitants than for the other countries is only travelling at short domestic trips with 1-3 nights stay. The share having at domestic holiday with 4+ nights is at level with the Middle European countries which is rather low. It seems as if a group of inhabitants in the new member states cannot afford to travel for a holiday but are compensating by short visits to relatives and friends. A similar pattern can be observed for Danish low income groups (Christensen, 2014; Christensen and Knudsen, 2015).

As seen from section 4 the group of new member states is more inhomogenous than the other country groups.

One group is the extreme low income countries Bulgaria and Romania with a very low share travelling abroad and those who do, travel often. The travellers

seem to be a small upper class group who can possibly mix business and holiday (mentioned by the Bulgarian survey description, see 'Bulgaria' at: http://ec.europa.eu/eurostat/cache/metadata/en/tour_dem_esms.htm)
With an expanding economy the travel activity will increase with rather high income elasticity as it has done formerly for Romania, 2.5%. A low share of travellers abroad makes plenty of room for an expanding middle class to travel.

The Baltic countries represent another group. 19-29% of the inhabitants travel today abroad, the highest share for Estonia (26-42% when including weekend trips etc.). According to see Table 6, the 5 main destinations are the neighbour Baltic countries, Russia (for a high share of the Russian minorities common language might attract), Belarus, Poland, and - especially for Estonia - Finland (again low language barrier) and Sweden. Germany and United Kingdom are the only Middle European countries on the list, possibly due to a relatively high share of emigrant workers travelling occasionally when work is available or for visits by their families. The number of trips for those travelling is very high, 1.5-2. The main change with an expanding economy will possibly be more journeys to traditional holiday destinations in Europe, but with a lower travel frequency than the actual. Less emigrant workers will on the other hand reduce some of the travel activity as is the case for Estonia with only 1.5 journeys per traveller. This two-way development in the attraction to travel might be an important reason for the relatively low income elasticity in the period up till now.

The two Central European countries Czech Republic and Slovakia are travelling more than the rest of the former communist countries. The share travelling is especially for Czech Republic higher. The number of journeys per traveller is lower which might be due to few emigrant workers. It may also be observed that Germany is not at the top 5 destination list for any of the 2 countries, see Table 6,. Destination countries are first of all the respective other with 18% each way which is of course due to the common language and the close relations between them as a former common country. Except for this, the main destinations are holiday destinations as Austria, Italy, Croatia and Greece. For Slovakia Hungary is also a main destination country whereas Poland is not for any of them. With an income elasticity which is not significantly different from 0 the development in travel activity is not increasing. This indicates that a saturation level for the new member states in the near future might not increase much above a level like Czech Republic's, perhaps 35-40% travelling and 1.5 journeys per traveller.

Poland and Hungary have a lower frequency of international travelling than the Baltic countries but a higher share of domestic journeys with 4+ nights. This might be due to the size of the countries which makes more options for domestic holidays, especially in Poland. For Poland the elasticity since 2008 has been high. The main destination countries are for both countries Germany possibly due to many emigrant workers.

For Slovenia the share travelling abroad is with 43% higher than for any of the other new member states. The travel frequency of the travellers is at level with many other countries. However, 57% of all journeys abroad are bound for Croatia. The rest are distributed evenly to the neighbours Italy and Austria and to Germany and Bosnia. This concentration to one country seems unrealistic for normal holiday activity. Inhabitants in the other Central and Eastern are also travelling to Croatia, possibly for holiday. And it is known to locals that many Slovenians have vacation homes along the Croatian cost. However, none of these explanations justify the very high share. A further explanation must be many immigrant workers and a minority of Croatian population who are travelling home respectively visiting family from/in the former Yugoslavian Croatia. When looking away from the Croatian group, the development in Slovenian travel activity will possibly be an increase with pretty high income elasticity when economy expands.

For Croatia the share travelling is low but the number of trips per traveller is high, a pattern observed for other countries with many emigrant workers. Slovenia is a main destination but only at level with Germany, Italy, and Austria. Bosnia with a large Croatian minority and vice versa is the main travel destination.

Finally we have a subgroup in the Mediterranean with Cyprus and Malta. The income level is higher than the rest of the new member states. The interaction with Western Europe has always been higher between others because they have both been British colonies until 1960. Britain has kept two military bases at Cyprus at which a peace-keeping force is furthermore located. A British community and their descendants still exist at the partly English speaking Malta (parallel with Maltesian). At Cyprus the population and language is mainly Greek. 24% of the outbound journeys from Cyprus and 27% from Malta are bound for United Kingdom. 37% of the trips from Cyprus go to Greece. 1/3 of the population have outbound journeys and the number of journeys with 4+ nights is very high, 1.97 from Malta and 3.55 from Cyprus. 30% of the journeys from Malta are bound for Italy which is the only neighbour country, located less than two hours from Malta by ferry. The income elasticity

for Malta is very high, somebody says that the Maltesians flew from the crowds of inbound tourist. The income elasticity for Cyprus is more moderate. It is possible that the travel frequency per traveller will increase further up to a Western European level when economy is expanding. For the small countries domestic holiday might be less attractive than for other Mediterranean countries. However, 3.5 annual journeys with 4+ nights for private purpose per person travelling in average from Cyprus seem too high, when comparing with all other countries. The number of journeys has formerly been collected by the border but is from 2012 changed to CATI. Our suggestion is that the share of inhabitants travelling which is has first time been collected from 2012 with the CATI survey is miscalculated. With the close relation to Greece and the high income level the share is more likely 50%. This would make 2,2 journeys per traveller which is more in line with other countries with close relation to another country.

5. CONCLUSION

The developed analyses and the considerations in section 5 shows that the long distance travel activity in Europe will go on increasing far into the future. The simple income elasticities which are calculated from Eurostat's indicator tables are not offering enough information for assessing the income elasticity. It is necessary to take both the share of the population travelling and the travel frequency of the travellers into consideration.

This has been done in an assessment country-group by country-group.

It is assessed that a saturation level is close to be reached for Luxembourg with 81% travelling abroad annually and 2.73 journeys per person travelling at journeys abroad with 4+ nights abroad. The number of journeys is very high due to many high income immigrant workers travelling home to visit families or who have their home elsewhere. If the share goes up to 85% and the number of journeys to 3 the saturation level will be around 2.5 annual long distance journeys per inhabitant with 4+ nights.

For countries like Norway and Switzerland the saturation share of people travelling might be at the same level or perhaps a little lower, e.g. 80%. The number of journeys will probably level out at a little lower level, e.g. 2 annual journeys abroad per traveller resulting in 1.6 annual long distance journeys per year with 4+ nights.

This level is probably also a saturation level for other western European countries and in the very long run also for the Eastern European countries.

However, the development will go slower for the other Nordic countries with vacation homes and for big countries like Germany and United Kingdom with more domestic travel activity.

For the Central and Eastern European countries the development against this level will be very long lasting. In the meantime the actual high travel level and development compared to the income will probably be slowed down as is the case in the Czech Republic. Other daily goods as bigger homes with more luxury furniture and equipment could for instance be more attractive when income increases.

Finally, for the Mediterranean countries the share travelling abroad will never get up to the mentioned high saturation level. The share travelling will increase, but slowly.

(Eugenio-Martin and Campos-Soria, 2010) has based on micro data from a cross-sectional European survey showed that people in countries with low temperature are travelling more abroad than inhabitants in warmer countries. They included a dummy for the summer temperature at 16 degrees. Our analyses show that it is the opposite way round, that inhabitants in warm countries are travelling less and the temperature limit is much higher.

Finally, it should be emphasized that further investigations are needed to better understand the relation between the share travelling and the number of journeys per traveller. Explaining variables as share of emigrant and immigrant workers at different income level, location in Europe and travel cost will be valuable information to include.

Considering the long time series of surveys for especially the old member states access to micro data would have been really attractive to use to be able to identify the effect of both macro economy, micro economy and on individual differences in education and family structure. Only this way it would be possible to draw conclusions on the long run development in travel activity.

BIBLIOGRAPHY

Alonso, G., Benito, A., Lonza, L., Kousoulidou, M., 2014. Investigations on the distribution of air transport traffic and CO2 emissions within the European Union. J. Air Transp. Manag. 36, 85–93. doi:10.1016/j.jairtraman.2013.12.019

Axhausen, K.W., Madre, J.-L., Polak, J.W., Toint, P.L. (Eds.), 2003. Capturing Long-Distance Travel. Research Studies Press LTD., Baldock.

Christensen, L., 2016. Environmental impact of long distance travel. Transp.

Res. Procedia 14, 850–859. doi:10.1016/j.trpro.2016.05.033

Christensen, L., 2015. Demand for long distance travel - A fast increasing but scarcely documented travel activity. Illustrated by Danish travel behaviour and compared with the other European analyses, in: AET Papers Repository. European Transport Conference, pp. 1–21.

Christensen, L., 2014. Long distance travel " today ," in: Proceedings from the Annual Transport Conference at Aalborg University. pp. 1–16.

Christensen, L., Knudsen, M.A., 2015. Long Distance Travel - A study of Dane's journeys during 15 years. DTU Transport Report 10, Lyngby.

Eugenio-Martin, J.L., Campos-Soria, J.A., 2010. Climate in the region of origin and destination choice in outbound tourism demand. Tour. Manag. 31, 744–753. doi:10.1016/j.tourman.2009.07.015

Eugenio-Martin, J.L., Campos-Soria, J. a., 2013. Economic crisis and tourism expenditure cutback decision. Ann. Tour. Res. 44, 53–73. doi:10.1016/j.annals.2013.08.013

Eurostat (2016): Tourism Statistics of Europeans. Statistics explained. http://ec.europa.eu/eurostat/statistics-explained/index.php/Tourism_trips_of_Europeans. Last updated 21.09.2016. Last accessed 24.09.2016

Frick, R., Grimm, B., 2014. Long-distance Mobility - Current Trends and Future Perspectives. ifmo Institute of Mobility Research.

Gomes, F., Santos, F., 2004. Design and Application of a Travel Survey for Long-distance Trips Based on an International Network of Expertise, in: European Transport Conference. Association for European Transport, p. 11.

Kite - A Knowledge Base for Intermodal Passenger Travel in Europe [WWW Document], 2009. URL http://www.kite-project.eu/kite/cms/index.php?option=com_frontpage&Itemid=1

Knudsen, M.A., 2015. Danish Long Distance Travel - A study of Danish travel behaviour and the role of infrequent travel activities. Technical University of Denmark.

Kuhnimhof, T., Collet, R., Armoogum, J., Madre, J.-L., 2009. Generating Internationally Comparable Figures on Long-Distance Travel for Europe. Transp. Res. Rec. J. Transp. Res. Board 2105, 18–27. doi:10.3141/2105-03

Kuhnimhof, T., Armoogum, J., 2007. Existence and Comparability of Data Sources [WWW Document]. URL http://kite-project.eu/kite/cms/images/stories/kite/WP2/D3 - Existence and Comparability of Data Sources.pdf

Peng, B., Song, H., Crouch, G.I., Witt, S.F., 2015. A Meta-Analysis of International Tourism Demand Elasticities. J. Travel Res. 54, 611–633. doi:10.1177/0047287514528283

Aamaas, B., Borken-Kleefeld, J., Peters, G.P., 2013. The climate impact of travel behavior: A German case study with illustrative mitigation options. Environ. Sci. Policy 33, 273–282. doi:10.1016/j.envsci.2013.06.009